



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,981	02/05/2002	Arun Gajanan Bahulkar	P8002	1581

24739 7590 06/22/2004

CENTRAL COAST PATENT AGENCY  
PO BOX 187  
AROMAS, CA 95004

EXAMINER

ALI, MOHAMMAD

ART UNIT	PAPER NUMBER
----------	--------------

2177

DATE MAILED: 06/22/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/071,981

**Applicant(s)**

BAHULKAR ET AL.

**Examiner**

Mohammad Ali

**Art Unit**

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 is/are rejected.  
7) ☒ Claim(s) 10 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This communication is in response to the application filed on February 05, 2002.

The application has been examined. Claims 1-21 are pending in this Office Action.

#### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119 (a)-(d), which paper have been placed of record in the file.

#### ***Information Disclosure Statement***

3. The references cited in the IDS, PTO-1449, Paper No. 2, have been considered.

#### ***Specification***

4. The use of the trademark JAVA™, C++™, SMALLTALK™,... has been noted in page 2, lines 5-6 and subsequent pages in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

#### ***Claim Objections***

5. Claim 10 objected to because of the following informalities: in page 24, in claim 10, line 2 ";" should be replaced by ":". Appropriate correction is required.

Art Unit: 2177

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Joseph Shi-Piu Fong ('Fong' hereinafter), USP 6,704,747 in view of Madan et al. ('Madan' hereinafter), USP 6,748,374.

With respect to claim 1,

Art Unit: 2177

Fong discloses a control system for enabling user access of data records stored in a relational database in an object oriented way (see col. 4, lines 10-15, Fong) comprising:

- a first object model representing a class mapped to a table in the relational database (see col. 3, lines 29-37, Fong);

- a second object model representing a query object modeled after the first object model according to the same modeling framework (see col. 3, lines 38-43, Fong);

- a software parser for reading the information contained in the first and second object models (see col. 34, lines 61-65, Fig. 48, Fong);

- a model generator for building a representative model from aggregated information from the first and second models (see col. 20, lines 53-58, Fong);

and

- a code generator for scanning the representative model and generating the appropriate application code for each node in the representative model (see col. 29, lines 37-42, Fong);

characterized in that a user supplies the input parameters for accessing the records desired from the database into a text receptacle of the second object model (see col. 9, lines 42-51 and col. 13, lines 22-27, Fig. 5a, Fong) and executes the model causing subsequent application code-generation processing that drives the access to the records in the ordered manner, the records served as an object or objects to a user program from which such records were retrieved

Art Unit: 2177

in a fashion requested and interpretable by the user program (see col. 17, lines 14-22, Fig. 9b Fong).

Fong does not explicitly indicate the claimed "code generator".

Madan discloses claimed code generator (computer system can send messages and receive data including program code through the network link and communication interface. Application can downloaded through the Internet and that downloaded application provides to generate of a statement in a database query language, see col. 29, lines 62 to col. 30, lines 3, Madan).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine teachings of the cited references because the code generator of Madan's teachings would have allowed Fong's system to have a query language statement to query or manipulate directory information objects in a relational database as suggested by Madan at col. 4, lines 34-35. Further, code generator as taught by Madan improves to hybrid use of Join operations with other types of aggregation operations in the generated SQL (see col. 4, lines 38-40, Madan).

As to claim 2,

Fong teaches wherein the modeling language is Unified Modeling Language (see col. 3, lines 1-5 et seq, Fong).

As to claim 3,

Fong teaches wherein the query language is Structured Query Language (see col. 3, lines 50-59, Fong).

As to claim 4,

Art Unit: 2177

Fong teaches wherein the mapping schema is one to one class to table with replication in the sub-classes (see col. 3, lines 14-25, Fong).

As to claim 5,

Fong teaches wherein the second object contains text options wherein if marked generate a method update or a method delete routine (see col. 22, lines 33-35, Fong).

As to claim 6,

Fong teaches wherein the modeling framework supports polymorphism with respect to object-to-relational mapping (see col. 23, lines 50-54, Fong).

As to claim 7,

Fong teaches wherein cursor, paging, and single row get methods are allowed (see col. 10, lines 1-5, Fong).

As to claim 8,

Fong teaches wherein access is based on a primary key (see col. 12, lines 19-21, Fong).

As to claim 9,

Fong teaches wherein access is based on an arbitrary predicate (see col. 8, lines 59-64 et seq, Fong).

With respect to claim 10,

Fong discloses a query object for accepting user input and facilitating automated object-oriented database accesses from a relational database (see col. 4, lines 10-15, Fong) comprising;

Art Unit: 2177

at least one input parameter supplied by a user (see col. 9, lines 52-58 et seq, Fong);

at least one output parameter returned by the query object (see col. 21, lines 5-7 et seq, Fong);

and at least one input instruction for generating method code for database access (see col. 9, lines 1-7, Fong);

characterized in that the query object manifests itself as a class object with operations in terms of user code generated such that execution of the query generates database access routines ordered by the query according to information of the class (see col. 9, lines 42-51 and col. 13, lines 22-27, Fig. 5a, Fong).

Fong does not explicitly indicate the claimed "code generator".

Madan discloses claimed code generator (computer system can send messages and receive data including program code through the network link and communication interface. Application can downloaded through the Internet and that downloaded application provides to generate of a statement in a database query language, see col. 29, lines 62 to col. 30, lines 3, Madan).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine teachings of the cited references because the code generator of Madan's teachings would have allowed Fong's system to have a query language statement to query or manipulate directory information objects in a relational database as suggested by Madan at col. 4, lines 34-35. Further, code generator as taught by Madan improves to hybrid use



Art Unit: 2177

of Join operations with other types of aggregation operations in the generated SQL (see col. 4, lines 38-40, Madan).

As to claim 11,

Fong teaches wherein the modeling language is Unified Modeling Language (see col. 3, lines 1-5 et seq, Fong).

As to claim 12,

Fong teaches wherein the user input is Structured Query Language (see col. 3, lines 50-59, Fong).

As to claim 13,

Fong teaches wherein the text receptacle contains text options wherein if marked generate a specific data update method and/or a data delete method (see col. 22, lines 33-35, Fong).

As to claim 14,

Fong teaches wherein the object drives database access based on a primary key (see col. 12, lines 19-21, Fong).

As to claim 15,

Fong teaches wherein the object drives database access based on an arbitrary predicate (see col. 8, lines 59-64 et seq, Fong).

With respect to claim 16,

Fong discloses a method for automatically generating application code for specific database access routines understood at a relational database, the routines called in an object-oriented way (see col. 4, lines 10-15, Fong) comprising steps of:

Art Unit: 2177

(a) providing a class object of data, the data represented and mapped to a table in the database (see col. 3, lines 29-36, Fong);

(b) providing a query object that manifests itself as the class object when executed (see col. 3, lines 50-55, Fong);

(c) supplying text input parameters to the query object, the parameters specifying the type of data and method of retrieval (see col. 3, lines 45-55 et seq, Fong);

(d) building a representative model from data contained in the class object and data contained in the query (see col. 4, lines 23-35, Fong);

(e) parsing the data from the representative object and generating the correct code for all represented nodes in the object (see col. 34, lines 61-65, Fig. 48, Fong); and

(f) executing the code and returning the specified data from the database to a user interface according to access parameters supplied by the user (see col. 8, lines 25-29 et seq, Fig. 48, Fong).

Fong does not explicitly indicate the claimed "code generator".

Madan discloses claimed code generator (computer system can send messages and receive data including program code through the network link and communication interface. Application can downloaded through the Internet and that downloaded application provides to generate of a statement in a database query language, see col. 29, lines 62 to col. 30, lines 3, Madan).

It would have been obvious to one ordinary skill in the data processing art at the time of the present invention to combine teachings of the cited references

Art Unit: 2177

because the code generator of Madan's teachings would have allowed Fong's system to have a query language statement to query or manipulate directory information objects in a relational database as suggested by Madan at col. 4, lines 34-35. Further, code generator as taught by Madan improves to hybrid use of Join operations with other types of aggregation operations in the generated SQL (see col. 4, lines 38-40, Madan).

As to claim 17,

Fong teaches wherein in step (a) the mapping is one to one class to table with replication in subclasses (see col. 3, lines 14-25, Fong).

As to claim 18,

Fong teaches wherein in step (b) the query object is of the same model framework as the class object (see col. 4, lines 24-35, Fong).

As to claim 19,

Fong teaches wherein in step (c) the text input is SQL (see col. 3, lines 50-59, Fong).

As to claim 20,

Fong teaches wherein in step (c) the text input includes an option of data update or delete routines (see col. 22, lines 33-35, Fong).

As to claim 21,

Fong teaches in step (e) the code is application code for retrieving records according to class and query instructions (see col. 22, lines 33-40, Fong).

Art Unit: 2177

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is (703) 605-4356. The examiner can normally be reached on Monday to Thursday from 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (703) 305-9790 or Customer Service (703) 306-5631. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for any communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.



Mohammad Ali

Patent Examiner

AU 2177

MA

June 17, 2004